

AMENDMENTS TO THE CLAIMS

Applicant has submitted a new complete claim set showing marked up claims with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing. This listing of claims will replace all prior versions and listings of claims in the application:

1-41. (canceled)

42. (Currently Amended) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising ~~nucleic acid molecules~~ an oligonucleotide containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein $X_1 X_2$ and $X_3 X_4$ are nucleotides, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

43 (Currently Amended) The method of claim 42, wherein the oligonucleotide ~~nucleic acid molecules~~ comprise the sequence 5' TCG 3'.

44. (Withdrawn) The method of claim 43, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

45. (Withdrawn) The method of claim 44, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

46 (Withdrawn) The method of claim 44, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTTCCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:7); 5'-TCCAAGACGTTTCCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTTCCTGACGTT-3' (SEQ ID NO:10); 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:54):

47. (Previously Presented) The method of claim 42, wherein the subject is a mammal.

48. (Previously Presented) The method of claim 42, wherein administration is at the site of exposure.

49. (Currently Amended) The method of any of claims 42-48, further comprising administering a papilloma virus antigen or vaccine.

50. (Currently Amended) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising an oligonucleotide ~~nucleic acid molecules~~ containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein $X_1 X_2$ and $X_3 X_4$ are nucleotides, wherein an antigen of the virus is not administered in conjunction with administration of the composition, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

51. (Currently Amended) The method of claim 50, wherein the oligonucleotide ~~nucleic acid molecules~~ comprise the sequence 5' TCG 3'.

52. (Withdrawn) The method of claim 51, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

53. (Withdrawn) The method of claim 52, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

54. (Withdrawn) The method of claim 52, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTTCCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:7); 5'-TCCAAGACGTTTCCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTTCCTGACGTT-3' (SEQ ID NO: 10); 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTTCCTGATGCT-3' (SEQ ID NO:54).

55. (Previously Presented) The method of claim 50, wherein the subject is a mammal.

56. (Previously Presented) The method of claim 51, wherein administration is at the site of exposure.

57. (Currently Amended) A method of treating, preventing or ameliorating a papilloma virus infection in a subject, comprising administering to the subject a composition comprising an oligonucleotide ~~nucleic acid molecules~~ containing at least one unmethylated CpG dinucleotide, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides, wherein the composition is free of papilloma virus antigen, and wherein the composition is administered in an amount sufficient to treat, prevent or ameliorate the papilloma virus infection in the subject, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

58. (Currently Amended) The method of claim 57, wherein the oligonucleotide ~~nucleic acid~~ molecules comprise the sequence 5' TCG 3'.

59. (Withdrawn) The method of claim 58, wherein the nucleic acid molecules comprise the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3' or 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, C-3'.

60. (Withdrawn) The method of claim 59, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-AACGTTCC-3', and 5'-GACGTTCC-3'.

61. (Withdrawn) The method of claim 59, wherein the nucleic acid molecules comprise a sequence selected from the group consisting of 5'-TCCATAACGTTCTGATGCT-3' (SEQ ID NO:3); 5'-TCCATGACGTTCTGATGCT-3' (SEQ ID NO:7); 5'-TCCAAGACGTTCTGATGCT-3' (SEQ ID NO:9); 5'-TCCATGACGTTCTGACGTT-3' (SEQ ID NO:10); 5'-TCCATGACGTTCTGATGCT-3' (SEQ ID NO:35) and 5'-TCCATGACGTTCTGATGCT-3' (SEQ ID NO:54).

62. (Previously Presented) The method of claim 57, wherein the subject is a mammal.

63. (Previously Presented) The method of claim 57, wherein administration is at the site of exposure.

64. (Currently Amended) A method for preventing a symptom of papillomavirus infection in an individual who has been exposed to papillomavirus, comprising administering a composition comprising a ~~poly~~oligonucleotide comprising an immunostimulatory sequence (~~ISS~~) to said individual, wherein the ISS comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3', wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides, wherein a papillomavirus antigen is not administered in conjunction with administration of said composition, and wherein said composition is administered in an amount sufficient to prevent a symptom of papillomavirus infection, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

65. (Currently Amended) The method of claim 64, wherein the oligonucleotide ISS comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

66. (Previously Presented) The method of claim 64, wherein the individual is a mammal.

67. (Previously Presented) The method of claim 64, wherein administration is at the site of exposure.

68. (Currently Amended) A method of reducing severity of a symptom of papillomavirus infection in an individual infected with papillomavirus, comprising administering a composition comprising a ~~poly~~oligonucleotide comprising an immunostimulatory sequence (~~ISS~~) to said individual, wherein the oligonucleotide-ISS comprises the sequence 5'-C, G, pyrimidine, pyrimidine, C, G-3', wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a sequence including at least the following formula:



wherein C and G are unmethylated, wherein X₁X₂ and X₃X₄ are nucleotides wherein a papillomavirus antigen is not administered in conjunction with administration of said composition, and wherein said composition is administered in an amount sufficient to reduce severity of a symptom of papillomavirus infection, wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a phosphorothioate internucleotide linkage and wherein the oligonucleotide containing at least one unmethylated CpG dinucleotide has a size of 8 to 100 nucleotides in length.

69. (Currently Amended) The method of claim 68, wherein the oligonucleotide ~~ISS~~ comprises the sequence 5'-purine, purine, C, G, pyrimidine, pyrimidine, C, G-3'.

70. (Previously Presented) The method of claim 68, wherein the individual is a mammal.

71. (Previously Presented) The method of claim 68, wherein administration is at a site of infection.

72. (New) The method of claim 42, wherein the subject is a human.

73. (New) The method of claim 42, wherein the method is a method for treating papilloma virus infection.

74. (New) The method of claim 68 wherein the subject is a human.